How to Blow Stuff Up

Gus Dorough

To become a high-explosives expert, read a few books.

By 1954, I wasn't totally happy with what I was doing, and I wasn't doing as good a job as I felt I was capable of. So I went job hunting. I came up with a couple of academic offers, and also one from a new place called Livermore. I had thoroughly enjoyed my work at the University of California Radiation Laboratory (UCRL) and Los Alamos during the war, and thought if I'm going to do some form of directed research no matter where I go, why not go to a place that has the resources and the know-how to do first-class applied work. So I gave up academia and came to Livermore.

It was clear that we needed to know something about high explosives here. I think they had one Los Alamos transfer here who had a knowledge of the theoretical behavior of explosives, but with respect to the pragmatics of how you formulate and handle these chemicals, we were totally babes in the woods. So the High Explosives (HE) Chemistry Group began in late 1954, which eventually developed into quite a large group.

In the beginning, there were two of us, John Kury and me. We appointed ourselves explosives experts and read a few books. We made a few phone calls and traveled around the United States. I would describe explosives chemistry in those days as an incredibly archaic military technology based on a lot of empirical tests and empirical rules. You had to learn a lot of jargon, but there wasn't much science; it was more of an art. Whatever really advanced work was going on in this country, it appeared to us, was coming principally from Los Alamos. We got a lot of help from Los Alamos. We got a hell of a lot of competition as well, but they were cooperative in telling us anything we wanted to know and sharing information with us.

We really had to develop our own charter, and eventually, we did. But we first had to spend some months just reading, talking to people, going to conferences, and trying to figure out what this funny area was all about.

Early Site 300 entrance.

"Back then, as part of our uniform, they issued us cowboy boots to wear so that our legs would be protected from the rattlesnakes."

Victor Alkire, Security Guard, Site 300

Head for the Hills

Bill Mumper

Mumper, the first recruit for the Laboratory's remote experimental test site, recalls the primitive bunkers nestled in the rugged hills at Site 300, between Livermore and California's Central Valley.

I came to work at the Laboratory in March of 1956. I was the first person that they hired to actually work at the Site 300 bunkers. Previous to that, they had just drafted people from spots in Livermore and taken them out there. Even after Roy Mullins had talked to me about this job, I still didn't have any idea of what was out there or what the job was. Without a Q clearance, I could not visit the site.

"It's a spot out there about 14 miles in the hills," Roy said. He didn't know what went on out there. He knew it involved working with high explosives and doing test firings, things like that. Other than that, he knew absolutely no more than I did about it at the time.

Communication between the bunkers in those days wasn't very good. There were telephones—some days they worked, and some days they didn't. What we had for a muster were the old military sound-powered phones. We had a line strung between the two bunkers and the Control Point (CP) and all the way down to the trim shack, and each place had its own ring. You would pick up the thing and crank the right ring in for whoever you wanted to talk to. Sometimes, the laborers with their machines would periodically cut the line in two, and then the maintenance machinists would have to track the line down and splice it together again.

In those days, the bunker supervisor himself ran the muster, saying "Okay, you've told me how many people are in here, and I've called the right places and accounted for the right number of bodies, so go ahead and shoot." We'd turn on the siren, wait two minutes, and shoot. It was about as primitive as you could get.

But from the beginning, you had a real crew concept in a bunker. The crew knew that what each one does is very important to the other person and that they have to know how to do it and when. It always was a team effort; your life depended on your teammates.

A few of the primitive bunkers at Site 300, circa 1959.